

Is regulation an all-or-nothing phenomenon?

Comparative analysis of the degree of intervention in
wholesale mobile access and
call origination market

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My aim in writing this master thesis is to examine a subject which is currently being dealt with regulators and the respective private sector throughout the EU and EEA. Therefore, it has been challenging to capture what the real world is concerned about, but still remain within the scope of some inherent theoretical approach.

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TABLE OF ABBREVIATIONS

2G	Second Generation Mobile Systems
3G	Third Generation Mobile Systems
ARPU	Average Revenue Per User
BT	British Telecom
CCP	Calling Party Pays
CFI	Court of First Instance
ComReg	Commission for Communications Regulation (Ireland)
ECJ	European Court of Justice
ERG	European Regulators Group
ETSI	European Telecommunications Standards Institute
GSM	Global Standard for Mobile Communications
ISP	Independent Service Provider
LRIC	Long Run Incremental Cost
MNO	Mobile Network Operator
MVNO	Mobile Virtual Network Operator
NHH	Nemzeti Hírközlési Hatóság (Hungarian National Communications Authority)
NPT	Post- og Teletilsynet (Norwegian Post and Telecommunications Authority)
NRA	National Regulatory Authority
NRF	New Regulatory Framework
ODTR	Office of the Director of Telecommunications Regulation (Ireland)
OFCOM	Office of Communications (United Kingdom)
Oftel	Office of Telecommunications (United Kingdom)
SIM	Subscriber Identity Module
SMP	Significant Market Power
SPs	Service Providers
TSPs	Tied Service Providers
UMTS	Universal Mobile Telecommunications System

TABLE OF CONTENTS

<i>Acknowledgement</i>	1
<i>Table of abbreviations</i>	2
1 INTRODUCTION	4
2 APPLICATION OF SECTOR-SPECIFIC REGULATION AND GENERAL COMPETITION LAW: A NEW BALANCE	5
2.1 OVERVIEW	5
2.2 GOALS AND INSTRUMENTS OF REGULATION	6
2.3 GOALS AND INSTRUMENTS OF COMPETITION LAW	9
2.4 TWO SETS OF LEGAL TOOLS: PARALLEL APPLICATION	10
3 BASICS OF REGULATORY INTERVENTION	11
3.1 THEORIES OF REGULATION	11
3.2 THE COST OF SECTOR-SPECIFIC REGULATION	13
3.3 ECONOMIC CONCEPTS IN SECTOR-SPECIFIC REGULATION OF ELECTRONIC COMMUNICATIONS	14
3.3.1 <i>Effective competition as a goal</i>	14
3.3.2 <i>The concept of effective competition in Community electronic communications law</i>	15
3.3.3 <i>Natural monopoly: where competition cannot exist</i>	16
3.3.4 <i>Barriers to entry</i>	17
3.4 OTHER MARKET IMPERFECTIONS WHICH TRIGGER ECONOMIC REGULATION	19
3.4.1 <i>Market especially vulnerable</i>	19
3.4.2 <i>Would oligopolistic interdependence suffice?</i>	20
3.4.3 <i>Conditions for Tacit Collusion</i>	21
4 TOWARD GENERAL COMPETITION LAW IN MOBILE TELEPHONY	23
4.1 REGULATORY FORBEARANCE: REFRAINING FROM APPLYING REGULATORY CONDITIONS	23
4.1.1 <i>Proportionality and procedural forbearance</i>	24
4.2 ALL OR NOTHING: BOTTLENECK APPROACH IN EX-ANTE INTERVENTION	25
4.3 THE NOTION OF 'ESSENTIAL FACILITIES'	26
4.3.1 <i>Access to 'Essential facilities' in the light of EC case law</i>	27
5 BOTTLENECKS IN MOBILE COMMUNICATIONS?	32
5.1 ACCESS AND CALL ORIGINATION MARKETS FROM A COMPARATIVE PERSPECTIVE	33
5.1.1 <i>Identification of the market</i>	33
5.1.2 <i>Definition of the product market</i>	34
5.2 VARIOUS FORMS OF ACCESS – FRAGMENTED MOBILE VALUE CHAIN	36
5.3 MANDATING ACCESS AS A CORE POLICY DILEMMA	38
5.4 THE NOTION OF ACCESS	40
5.5 PERSPECTIVES ON MVNOS' REGULATORY ENVIRONMENT	41
5.6 TERMS AND CONDITIONS OF ACCESS	43
5.7 IS ACCESS TO MOBILE NETWORKS FOR MVNOS A MONOPOLISTIC BOTTLENECK?	44
6 A BRIEF SKETCH FROM A COMPARATIVE PERSPECTIVE	45
6.1 NORWEGIAN MOBILE MARKET: STRUCTURAL BARRIERS TO ENTRY	45
6.2 IRELAND: BEHAVIOURAL EVIDENCE	47
6.2.1 <i>Competition concern: wholesale market behaviour</i>	48
6.3 THE UNITED KINGDOM: WITHDRAWAL OF REGULATION	49
6.4 HUNGARIAN MOBILE MARKET: ABSENCE OF WHOLESALE TRANSACTIONS	52
6 CONCLUSIONS – A ROLE FOR REGULATION?	54
SELECTED BIBLIOGRAPHY	56
TABLE OF LEGISLATION	61

1 Introduction

Public intervention in markets today is mainly derived from the global rule that activity should only be considered where the invisible hand and market based solutions are inherently deficient.¹ Regulation in such a cases is argued to be justified because the uncontrolled market place will, for some reason, fail to produce behaviour or results in accordance with the public interest.² In all other cases the competitive marketplace potentially leads to welfare maximization.

The market based supply of telecommunications, however, has in most countries developed only recently after the privatization of the former state-owned incumbent operators. For the last twenty years, mobile telephony has been, along with the Internet, the technology that has most dramatically changed the telecommunications sector. As the service became more common, mobile telephony challenged the notion of natural monopoly within the sector, and this has unravelled a wave of regulatory change that has deeply changed the market structure of the whole telecommunications industry.³ In the transition period to competitive markets entirely ruled by general competition law, the European electronic communications industry is still subject to particularly strong measures of public intervention in order to address clearly identified market failures in the light of some over-riding public policy concern. One caveat is needed at this point: with such enormous complexity resulting from 'regulatory fine tuning' introduced by the NRF, are we going to lose the fresh and radical impetus of deregulation and competition?⁴

This paper discusses the degree of intervention in wholesale access and call origination market on public mobile networks under the auspices of the first market analyses carried out according to the NRF. The overall deregulatory potential of the NRF envisages increasing reliance on ex-post competition law remedies instead of ex-ante regulatory intervention. The implicit vision is to address market failures by general competition law where markets are effectively competitive, and accordingly reduce the application of sector-specific regulation. This phenomenon corresponds with the theoretical approach according to which ex-ante regulation should only be applied to "monopolistic bottlenecks" and phased out elsewhere.

¹ See Bolter et a. (1990), and Baldwin, Cave (1999); pp. 9.

² See Francis (1993); chp. 1.

³ Valletti (2003); pp. 4.

⁴ Grewlich (1999); pp. 943.

Despite of this straightforwardness, there will be many more uncertainties ahead as to how the value chain for mobile communications services will take shape, where will be its bottlenecks and how, when and where regulatory intervention in MVNO arrangements will appear.

The fact that the MNOs have vertically integrated network and retail operations and are protected by high barriers to entry at the network level does not in itself mean that the mobile sector cannot become effectively competitive. In previous reviews of the mobile sector, Oftel concluded that the structure of four mobile operators operating in a market where there are high barriers to entry might result in a range of outcomes, from vigorous competition to collusion between the operators. In fact, competition and collaboration are the twin forces propelling the mobile sector forward; the question is how regulators capture this antagonism.

It is the aim of this paper to examine the regulatory *margin of manoeuvre* which could equally lead to the exercise of regulatory forbearance or trigger more ex-ante intervention. Whether or not a certain market is effectively competitive will determine whether or not the market needs to be regulated by means of sector-specific regulation: *to regulate or not to regulate*, that seems to be the question in markets characterised by strong tendency towards competition.⁵

2 Application of sector-specific regulation and general competition law: a new balance

2.1 Overview

As regards the dual regime of networked industries such as the electronic communications two sets of tools are present to influence competitive conditions. sophisticated body of sector specific regulation on the one hand, and competition law as applied in the electronic communications sector. The former addresses issues before they arise and envisages them in a rather general perspective. By contrast, general competition law consists of ex post intervention, where an authority reacts against behaviour which has already been adopted by one or several undertakings. It is therefore that competition law is considered to be a less interventionist tool than regulation.

⁵ Koenig, Bartosch, Braun (2002); pp. 320.

Public intervention through sector-specific regulation is closely linked to the concept of networked industries. Today, after liberalization and introduction of competition in the electronic communications markets, the specific challenges for public intervention stem from the fact that most incumbents are still able to enjoy significant advantages by controlling essential facilities and exploiting economies of scale and scope. These factors affect newcomers to the market, they provide efficiency advantages for large volume and number of services and a new entrants will find it difficult to compete with already well established network operators.

One important economic reason for regulation is to help achieving the optimum level of production from a social point of view. The need for regulation depends on the ability of the market to create this optimal situation by itself.⁶ Historically, the telecom sector has been organised by a monopoly network operator, this institutional set up gave enough justification for regulation. In the transition period towards competition market imperfections call for further regulation. Mobile communications, however, is exposed to competition concerns in a much weaker form, because of large number of operators being present from an early stage of market development. In fact this industry became the first major laboratory of competitive supply of telecommunications services.⁷ This fact triggers discussions on whether sector-specific intervention is still necessary or whether market forces alone would be able to create optimal allocation of services for all consumers both in terms of quantity and quality.

2.2 *Goals and instruments of regulation*

On a very aggregate level the goal of economic regulation in the telecom sector is to promote competition and to ensure adequate production of services at appropriate prices. Nevertheless, NRAs have to take an utmost account of the complexity of the policy objectives and sub-objectives. This is due, apparently, to a desire on the part of the European legislator to formulate in a didactic manner the values to which NRAs must pay particular attention.⁸ In fact, the NRF aims to identify and create values which value creation introduces constraints

⁶ Falch (1997); pp. 107.

⁷ Gruber (2001); pp. 61.

⁸ Nihoul, Rodford (2004); ch. 2.

on the type of actions that NRAs may undertake. However, one also has to bear in mind that the more constraints an organization face, the less likely that a value will be produced.⁹

Regulators would need very clear objectives, as well as a set of general regulatory principles if they were to succeed in stimulating competition in the communications market. At this stage, it is worthwhile to recall that the old framework was mainly designed to *manage the transition to competition*, on the other hand, the NRF aims to *reinforce* competition in all market segments.¹⁰ Therefore a lighter regulatory approach has been envisaged, whilst ensuring that dominant players do not abuse their market power.

In comparison with the old framework, the enumeration of regulatory objectives to be attained by NRAs may appear as an innovation in the NRF. Article 8 of the Framework Directive sets out three key policy objectives (1) to promote competition in the provision of electronic communications networks (2) to contribute to the development of the internal market and (3) to promote the interests of the citizens of the European Union. Furthermore, each objective is supported by a number of sub-objectives (a whole list can be found in Article 8 paragraph (2) (3) and (4) of the Framework Directive). The Access Directive gives the same margin of manoeuvre for NRAs, as it lays down a procedural framework for NRAs to follow, and identifies factors to be taken into account when granting access, but does not specify precise access obligations.¹¹

Yet it is only the so-called public interest theory which takes the sanguine view that regulatory objectives are indeed the main justifications for intervention which is to achieve overall welfare.¹² The world has moved on and learnt much more about the theory and practice of regulation. In particular, we have come to recognise the potentials of overregulation, high regulatory costs, heavy-handed supervision of firms with an unsuitable regulatory instruments and regulatory capture.¹³ There might be an inherent paradox to over-regulation: whilst moving towards light-handed regulation, regulatory objectives multiply, therefore the firm that may originally have been subjected to regulation because it was seen as

⁹ Conference presentation held by Zahler, Robert on Evolving sourcing through value-chain analysis, Contemporary Issues in Global IT Law, Keble College, Oxford, UK, 8 July, 2004

¹⁰ Farr, Oakley (2002); ch. 1.

¹¹ See Article 12 (2) of the Access Directive

¹² Consistent with standard economic analysis, public policy increasingly intervenes in markets only to address clearly identified market failures or in the light of some over-riding public policy concern.

¹³ Knieps (2001); pp. 14.

natural monopoly now is regulated for a variety of public purposes. This regulatory complexity may result in the first instance difficulties for NRAs as they seek to meet varied and perhaps contradictory regulatory objectives.¹⁴

After goals are specified, the regulatory instruments (resources) available to help achieve these goals must be assessed. Some commentators argue that Article 8 of the Framework Directives also provides a set of so-called basic regulatory principles, given their general character, these principles apply in all circumstances. They are meant to *permeate the NRF*.¹⁵ These basic regulatory principles flesh out the means to be used in order to reach objectives. Among them are the obligations for NRAs to avoid discrimination,¹⁶ comply with the principle of proportionality¹⁷ and remain neutral in technological choices.¹⁸ Proportionality will be discussed later in this paper as a potential tool for exercising regulatory forbearance.

The most common policy instruments of intervention include (a) entry and access regulation, (b) price regulation, (c) control of earnings and (d) the setting of quality standards.¹⁹ Very often these instruments are applied simultaneously. Here they will be briefly sketched for an overview.

Entry restrictions are most visible where licenses are issued e.g. for the operation of public mobile networks. Indeed, market structure is determined exogenously by the policy maker, but is also influenced by technological constraints.²⁰ Up-front licence fees have had significant implications for competition in the market after spectrum allocation: high licence fees may be a signal for post-entry collusion.²¹ Within the framework of sector-specific regulation of access, NRAs can act *ex ante* and impose, as necessary, access and interconnection obligations going into substantial details regarding price and technical elements of access. For the purpose of this paper it should be noted here that mandating access to the network of a mobile operator for Mobile Virtual Network Operators has been a hotly debated issue in the mobile era. New thoughts have come that service competition on

¹⁴ Francis (1993); pp. 30.

¹⁵ See *supra*, note 9, pp. 96.

¹⁶ Expressed in various EC provisions, e.g. Framework Directive, Article 8 (3) (c) ensuring that there is no discrimination in the treatment of undertakings in similar circumstances.

¹⁷ See Framework Directive, Article 8 (1) 'Such measures shall be proportionate to those objectives.'

¹⁸ *Ibid.*

¹⁹ Sappington, Weisman (1996); pp. 103. et seq

²⁰ See *supra*, note 8.

²¹ *Ibid.* pp. 51.

accessible infrastructure to a reasonably priced access might lead to the variety and a better European consumer's satisfaction. Mandated access in most cases goes along with specific prices which are to be charged for access. Therefore price controls are among the most common regulatory instruments and can take many forms. The dominant paradigm in current regulatory reforms is that of forward-looking long-run incremental cost. The idea behind the use of LRIC is to set access prices on the basis of an efficient cost benchmark rather than on the operator's actual (embedded) costs.²² Control of earnings is another important measure, usually put into place to prevent companies not restrained by full competition to generate unreasonable profits.²³ Rate-of-return regulation, widely practiced in the United States during the 80's is a good example. The regulator would calculate an allowable rate of return on assets high enough to cover costs and sufficient to maintain investor's willingness to replace and expand the companies' assets. Lastly, regulating standards in the telecom industry, in which significant network externalities prevail, is aimed at preventing welfare losses that might occur due to incompatible systems.

2.3 Goals and instruments of competition law

General competition law like regulation is a mechanism for public control of market behaviour, but traditionally very different in nature. Yet the perceived antagonism between competition and regulation is destined to disappear.²⁴ In fact, competition has already been shaping regulation: it is the latter which has been adapting itself to suit the approach of the former under the auspices of the NRF.²⁵

As has been described above social and economic objectives of regulation requires a more rigid intervention. On the contrary, the objective of competition policy can be achieved by more flexible mechanisms. In the European Union, broadly speaking, there are two goals of general competition law: the first is to promote effective and undistorted competition by fostering economic efficiency, so as to maximize consumer welfare, the second is to promote the integration of the EU member states (the pursuit of the internal market). Over the years

²² Laffont and Tirole (2000); pp. 148.

²³ Baldwin, Cave (1999); pp. 224.

²⁴ Monti (16 September, 2002) conference speech; 'It is our strong belief that the application of fundamental competition law notions, such as market definition and dominance, in an ex ante environment represents the best means to ensure a smooth transition towards a fully liberalised electronic communications market, in which, hopefully one day, only the competition rules will apply.'

²⁵ Krüger, Mauro (2003); pp. 36.

EC competition law has clearly outgrown its internal market origin and now forms a body of law that is still linked to its origins yet largely independent in its application, implementation and aims.²⁶

Three main types of antitrust rules can be identified. The first type of rules prevents anti-competitive agreements between operators, such as agreements aimed at fixing purchase or selling prices. However, some agreements might be beneficial, though found to restrict competition at the wholesale level with potential harmful effects in downstream retail markets. A good example can be found in two Commission exemption decisions which set out how far mobile operators can cooperate through site sharing and national roaming.²⁷ The two decisions provide clear guidance on what forms of network cooperation by mobile operators are compatible with the EC competition rules and therefore, declared not to restrict competition, or exempted, due to developing powerful network capability that will allow new and innovative content and applications to be launched.

The second type of rules deals with firms which enjoy dominant position. The policy objective here is to prevent those firms from abusing their dominance vis-à-vis end-users or other operators. Examples of prohibited behaviours might include, for instance, refusing to deal, imposing excessive or predatory prices, price discrimination, and bundling/tying.

The third type of rules prohibits mergers which would substantially lessen competition. Given the difficulty of unscrambling merged companies once they have operated together, most legal systems provide for ex ante controls of proposed agreements.

2.4 *Two sets of legal tools: parallel application*

For the time being, the dualism of general competition rules and sector-specific regulation lies in the heart of the applicable access regime. On the one hand it could be detected in the *integration of competition law methodologies and principles*²⁸ in the economic regulation of the electronic communications sector (e.g. market definition, assessment of SMP), and on the

²⁶ Cruz (2002); pp. 100

²⁷ Commission Decision of 30 April 2003 in case number COMP/38.370-O2 UK Limited/T-Mobile UK Limited, Commission Decision of 16 July 2003 in case number COMP/38.369 T-Mobile Deutschland/O2 Germany

²⁸ De Streel, Alexandre (2003); pp. 489

other hand the parallel application of general competition rules *alongside* regulation. Practitioners are thus presented with two series of tools: distinction between these tools are based on the circumstances in which intervention associated with each set of rules takes place. When dealing with access-related issues, practitioners should, first examine whether the rules of the NRF may be applied. General competition law may be used as a second resource. It provides useful tools in three sets of circumstances.

(1) The advantage of general competition rules is that they apply sector independent which makes them more flexible than sector-specific rules, especially in cases such as refusal to access. Rapid technological developments could bring about new regulatory challenges and sector-specific framework would become rigidly opposed to any change. The competition rules of the Treaty, therefore, have a gap-filling function as they address issues which cannot be dealt with under sector-specific regulation.²⁹

(2) Furthermore, the implicit vision of the new framework itself, meaning that economic regulation applies when and until it can control market power more efficiently than antitrust, calls for parallel application. As sector-specific regulation may be gradually phased out, some markets of the electronic communications sector may solely be governed by the Treaty's competition regime.

(3) Thirdly, general competition law may also be useful in interpreting the NRF where rules belonging to the specialised domain of sector-specific regulation allow a wide margin of interpretation. This is particularly true since the European legislator has aligned the basic concepts and methods of the framework with general competition law.

3 Basics of regulatory intervention

3.1 Theories of regulation

To begin with, regulation is about constraint, the setting of reasonable limits, the charting of middle course somewhere between a totally unfettered activity and prohibition. As Francis

²⁹ Braun, Capito (2002); pp. 51-70

rightly points it out, 'regulation as a half-way house is unlikely to be a common home for a deeply divided community.'³⁰

Regulatory activity had initially been supported by the idea that it was in the public interest to intervene in the markets due to the assumptions that 'economic markets are extremely fragile and apt to operate very inefficiently if left alone [...]'³¹ and that intervention did not produce any costs. In this view which is called the 'public interest' theory regulations's purpose is to achieve certain publicly desired results in circumstances where, for instance, the market would fail to yield these³² in the sense that regulation increases social welfare wherever monopoly power is abused or maldistribution in the economy detected.³³

But empirical research in the 60's and 70's made apparent that regulation was not positively correlated with any form of market malfunction and that regulation often seems to fail to deliver public interest outcomes. Political scientists called attention to the influence of different interest groups in the regulatory policy-making process. The regulatory capture explains that regulation is most likely to be set up to serve the interests of the regulated and it promotes industry profit rather than social welfare.³⁴ The Chicago theory as seen in the writings of George Stigler and Sam Peltzman suggested that regulation in large measure is an exercise in rent-seeking behavior – that is, firms seek state regulatory intervention in order to secure income which otherwise would not be obtained under normal conditions of market competition. Regulators come to incorporate the industry's judgement that regulation is about maintaining market stability for existing firms. Obviously the more high-powered incentives are at stake, the larger the benefits are for the regulated firm to capture its regulator.³⁵

It sounds rather theoretical, but practical examples are present in connection with LRIC price regulation which gives regulators a key role in managing entry. On the other hand, as Laffont and Tirole point it out, the determination of long-run incremental costs is highly discretionary. LRIC preclude operators from making money on access and give them strong incentives to favour their competitive affiliates by biasing access against their competitors. These incentives call for heavy-handed supervision of the access provider operator. No doubt that

³⁰ Francis (1993); pp. 18.

³¹ Posner (1974); pp. 336.

³² Baldwin and Cave (1999); pp. 19.

³³ Posner (1974); pp. 336.

³⁴ Peltzman (1976), pp. 211 et s.

³⁵ Laffont, Tirole (2000); pp. 57.

regulation becomes rather costly and also creates scope for interest-group politics in which the different parties try to influence the regulators' exercise of discretion.³⁶

3.2 *The cost of sector-specific regulation*

Based on the above-described evolution of thought on regulation economists have come to the more or less commonly shared agreement that when in doubt as to the proper policy route, public decision makers should opt for a market based solution. Hence springs the expression: competition is the best regulator.³⁷

It has been argued by several commentators that regulatory effects on innovation are considered negative. Regulation is supposed to stifle investment and risk taking because ex ante price and entry regulations delay rapid adoption of new technology, so incumbents may have little incentives to innovate because preemptive strategies become less attractive.³⁸ Also they may fear to be unjustifiably regulated in the future making costly innovation a risky matter. The recent developments within mobile communications, more precisely the introduction of 3G services creates an obvious dilemma for the regulators: they have strong incentives to give exclusive rights to some operators in order to facilitate a fast and complete rollout of UMTS networks and to reap the monopoly rent. At the same time they do want to maintain competition by ensuring access to mobile networks (ex-ante regulatory action to mandate access).³⁹ Striking a reasonable balance between these interests is indeed a challenge.

During the consultation on the draft joint ERG/EC approach on appropriate remedies in the new regulatory framework, it has been argued by different operators that according to the proportionality test regulatory costs should be systematically taken into account, in particularly the so-called error costs, i.e. the social losses which arise when the regulatory obligations prevent operators from increasing efficiency. NRAs shall consider that mandating access does not lead to offsetting costs in the form of reduced investment and innovation.⁴⁰ The potential gains from access, for example, may be offset by other obligations that

³⁶ Ibid., pp. 149.

³⁷ See *ibid.*, pp. 210.

³⁸ Bourreau, Dogan (2001); pp. 171.

³⁹ An example for this dilemma can be detected in the decision of OTDR in Ireland obliging the holder of 'A' licence for 3 G mobile services to provide access for MVNOs on a retail minus basis.

⁴⁰ Comments submitted to the European Regulatory Group/EC Commission on 19th January, 2004 by Case Associates

accompany mandated access. It would be rare for NRAs to mandate access without imposing a non-discrimination obligation. However, non-discrimination can generate offsetting costs by reducing the willingness and ability of operators to develop wholesale deals with service providers and deterring price competition by reducing competitive pressure.⁴¹

To sum up, the costs of regulation, in terms of losses due to capture as described, and additionally due to the direct cost related to regulation are considered to be too high.⁴² This means that when there is a choice between general competition law and sector-specific regulation, market players tend to prefer the former resulting in intervention only on a case-by-case basis, closer to a 'let-the-market-rule' concept.

3.3 *Economic concepts in sector-specific regulation of electronic communications*

This chapter shall describe economic theory related to regulation which appears relevant due to the reason that the inclusion of competition law principles in the new package marks a clear step in the direction of an economic dimension based on effective competition.

3.3.1 Effective competition as a goal

Effective competition has many interpretations in economic theory. According to *Clark*, competition is a dynamic process characterised by continuously changing and developing conduct of all market participants.⁴³ Effective competition induces the market to perform well and prevents firms from rising their prices much more above their costs. Monopoly power does the reverse; when the monopolist rises its price above costs the buyers have no alternative to turn to. However, a competitive firm has little choice or control, because its customers do have a wide range of choice and can turn to other suppliers.

Schumpeter's thoughts concerning competition were influenced by the role played by innovation. He argued that technical progress and the economic growth it caused are far more important than static efficiency in resource use. Innovation causes for the entrepreneur to make profit for a limited time, but competition is only temporarily suspended whilst the

⁴¹ Remedies under the New EU Regulation of the Communications Sector, Case Associates (20 June, 2003)

⁴² See e.g. Posner (1969); pp. 635-637

⁴³ Cox, Jens, Markert (1981); pp. 14.

accumulated profit till this point is enough to pay back the risk and the invested capital. This profit stimulates market entry in the future to take risks and invest capital.

3.3.2 The concept of effective competition in Community electronic communications law

Effective competition rises to become a key concept of the NRF. Considering the alleged importance of the concept, as a key phrase of triggering sector-specific regulation, and to ensure that it is equally applied in different member states, the meaning needs to be clarified. Remarkably, NRAs shall not impose obligations where they conclude that there is effective competition, proving the new regulatory regime to be more flexible than the old one.⁴⁴ In fact, one of the most important aims was when constructing the NRF to ensure that the regulator has been given a *wide margin of manoeuvre*.

Therefore, Article 16 Framework Directive appears to establish a deregulation mechanism: where national regulatory authorities are convinced that a market is effectively competitive they shall withdraw existing sector-specific regulation. Unfortunately, the notion of effective competition is neither defined by any provision of the Framework Directive nor by any other directives of the NRF. However, having a closer look at the Recitals of the Framework Directive, Recital 27 seems to make a clear point: significant market power and effective competition do not go together.⁴⁵ It is important to note that according to the case-law of ECJ a recital does not form part of the text of a directive, but it may cast light on the interpretation of the given legal instrument.⁴⁶ The Commission in its Guidelines on market analysis and the calculation of SMP expressly equates the criterion of effective competition with the lack of SMP on a given market.⁴⁷ Some commentators argue that whilst in the first instance, the concept of effective competition seemed to play a significant role in the phasing-out of sector-specific regulation, the result of the foregoing analysis is sobering: it seems there is no room for a *distinct* concept of effective competition (emphasis added).⁴⁸ Because of the presence of undertakings with single or collective dominance in the majority of the electronic

⁴⁴ See Article 16 (3)-(5) of Framework Directive

⁴⁵ 'It is essential that ex-ante regulatory obligations should only be imposed where there is not effective competition, i.e. in markets where there are one or more undertakings with significant market power, [...]'.

⁴⁶ Cf. ECJ, *Casa Fleischhandels-GmbH*, [1989] ECR 2789 (2808), para. 31; ECJ, *Merck*, [1983] ECR 3781 (3791 et seq.), paras. 10 and 15.

⁴⁷ '[...] a finding that a market is effectively competitive, is, in effect, a finding of an absence of single or collective dominance on that market.'

⁴⁸ Koenig, Bartosch, Braun (2002); pp. 331.

communications markets, Recital 27 Sentence 1 will prevent a large scale phasing-out of sector-specific regulation at this stage.

3.3.3 Natural monopoly: where competition cannot exist

Natural monopoly is the only case where it is more efficient to have a single producer at every level of output and it is a particularly good example for the scenario when economies of scale are combined with economies of scope. For decades, the absence of competition in telecommunications was motivated by the existence of large fixed costs in several parts of the network, whose duplication was neither privately profitable nor socially desirable.⁴⁹ In the early days, mobile communications was considered as a natural monopoly precisely because frequency spectrum availability was so scarce and the efficiency in using the spectrum resource was so poor.⁵⁰ It therefore seemed reasonable to have the whole frequency spectrum foreseen for mobile communications services to be allocated to just one operator. Only with the introduction of more efficient cellular systems some countries adopted duopoly market structures.⁵¹

For the purpose of this paper, it is important to note that not all aspects of a supply process or network may be naturally monopolistic. An inherent feature of many networks is that there is opportunity for ample competition over most parts of the network – yet there is one part of a network that is subject to some sort of inevitable monopoly.⁵² The real task of regulators (at least those committed to minimalist regulation⁵³) is to identify those parts of the transmission process (or network) that are naturally monopolistic so that these can be regulated by price and access regulation while other aspects are left to the influence of competitive forces. As described above, at the radio network provision level the scarcity of spectrum could be considered as the bottleneck element to which mandating access is a core policy dilemma. Gruber argues that this is in spite of the progress the industry made in increasing spectrum

⁴⁹ Laffont, Tirole (2000); pp. 3.

⁵⁰ Gruber (2001); pp. 60.

⁵¹ Gruber and Verboven (2000) have shown that countries that deviated from the monopoly model benefited from a consistently higher market growth. This fact is particularly striking for countries in Central and Eastern Europe.

⁵² Bishop (2004); pp. 14.

⁵³ Baldwin, Cave (1999); pp. 11.

efficiency and in getting substantially larger portions of the frequency spectrum assigned for its own purposes.⁵⁴

However, it is reasonable to conclude that as technological evolution reduces the price of mobile communications, mobile networks, *which present few if any natural monopoly features*, become cheaper to deploy than fixed networks.⁵⁵ In addition the development of alternative networks could also be facilitated.

3.3.4 Barriers to entry

Entry barriers appear as an important structural characteristic of the telecom industry in the sense that if a network constitutes an essential facility for competitors in the downstream market it is typically due to the existence of entry barriers,⁵⁶ where the provision of service requires a network component that cannot be technically duplicated or only duplicated at a cost that makes it uneconomic for competitors. Therefore the competitiveness of an industry depends heavily on the ability of potential competitors to enter a specific market.⁵⁷

Entry barriers are defined by Bain⁵⁸ as '[...] the advantages of established sellers in an industry over potential entrants, these advantages being reflected in the extent to which established sellers [...] raise their prices above a competitive level without attracting new firms to enter the industry.' According to Recital 11 of the Commission Recommendation on Relevant Product and Service Markets, this definition would qualify for structural entry barriers which could be detected when the market is characterised by substantial economies of scale and/or scope and high sunk costs.

The wholesale mobile access and call origination market is characterised by significant barriers to entry at the network level. The current constraints on spectrum availability mean that only licensed mobile network operators have an allocation of spectrum. This fact constitutes a legal or regulatory barrier which results from administrative measures having direct effect on market entry. In addition there are significant sunk costs involved in building

⁵⁴ Gruber (2001); pp. 69.

⁵⁵ Geradin, Kerf (2003); pp. 7.

⁵⁶ Mahieu (1998); pp. 31.

⁵⁷ Stehmann (1995); pp. 57.

⁵⁸ Bain (1956); pp. 3.

a mobile network with national coverage.⁵⁹ Sunk costs are often referred to as a barrier to exit.⁶⁰ Costs are sunk if a firm cannot recoup them when leaving the market. The irreversible capital commitments which the existing operators have already undertaken make them stick to the market and induce incentive to use strategic behaviour against potential entrants in order to secure their own position.

The fact that mobile telecommunications services have experienced drastic developments in the recent years calls for further elaboration on entry barriers. In a mobile communications network, radio transmission replaces the physical connection between the user and the base station. The scarce resource required for radio transmission is the spectrum. Due to technological progress, capacity constraints from spectrum scarcity have been gradually reduced. As Valletti puts it, “the evolution of the industry is a race for relaxing this constraint”.⁶¹ Fundamental improvement in the exploitation of the radio spectrum occurred with the transition from the analogue to the digital technology which convert the voice into distinct electronic pulses and transmit them as a digital ‘bit stream’, which allows a more efficient use of the radio spectrum. Due to available spectrum, access to frequencies for GSM in many countries has therefore no longer been a formal entry barrier for operators wishing to establish themselves with a new network.⁶²

Spectrum trading seem to relax entry barriers as well, according to David Edmonds, the former Director General of Oftel, it could get rid of entry barriers and remove constraints on spectrum usage. “Those with more spectrum than they need [...], should be able to sell any surplus capacity to the highest bidder just as they would sell land or other assets for which others had more use,” he said. It will remove barriers to market entry created by blocks of frequencies being reserved for particular uses, and promote competition in the supply of spectrum-driven services. Undoubtedly, the spectrum scarcity and the notion that scarcity is not scarce are two fundamentally different paradigms and it seems that spectrum trading introduces the question: are we struggling between two different paradigms, having difficulty letting go of the old and instead attempting to embrace something in the middle?

⁵⁹ See 5.3.14 NPT market analysis: ‘Yet there are relatively high sunk costs associated with the building of a commercial network with sufficient coverage, i.e. coverage in more than merely the central Østland region and large cities in Norway.’

⁶⁰ Stehmann (1995); pp. 58.

⁶¹ Valletti (2003); pp. 4.

⁶² See 5.3.13 NPT market analysis (point 263, 265 and 268); ‘In summary NPT does not regard the lack of frequencies today as an entry barrier in the market.’

3.4 *Other market imperfections which trigger economic regulation*

There are many more concepts that can increase anti-competitive market structures and that are scrutinized by regulatory authorities. In the context of the NRF, the most important market failure is that associated with market power, which plays a central role in competition law, as well. The idea behind the use of collective dominance as a basis for regulation stems from the need to control the action of oligopolists falling short of the notion of single firm dominance.⁶³ The concept has been integrated into ex ante regulation by Article 14 (2) Framework Directive.

Based on economic theory, oligopolistic competition is detected when a small number of players compete on the market. Nevertheless, oligopoly is not about numbers but collective market power. This model of market behaviours falls between monopoly and perfect competition. A variety of explanatory theories exist trying to embrace different approaches (e.g. game theory), however, it is beyond the scope of this thesis to give a thorough overview of all the underlying economic assumptions. The main problem for oligopoly theory is that a virtually infinite number of assumptions can be made. Each assumption results in a different market outcome, ranging from fully competitive behaviour to fully collusive behaviour. It has been said that the oligopoly problem is indeterminate, because in oligopoly 'anything can happen'.⁶⁴

3.4.1 Market especially vulnerable

The reason why oligopolistic interdependence should be discussed here, is linked to the fact that mobile access and call origination market with few, but large players are especially vulnerable for joint dominance to be assessed by the regulator. It may well be the case that no operator enjoys a single dominant position anymore in head-to-head competition, but the natural structure of the market and certain regulatory obligations increase the risk of collective dominance to be found. As Larouche points it out in discussing forms of access to mobile networks, the existing GSM 900 operators could also be found to hold a collective dominant position, so that a refusal to allow national roaming on reasonable terms would constitute an abuse of that collective dominant position (using the essential facilities doctrine). This

⁶³ Bavasso (2004); pp. 103.

⁶⁴ Scherer, Ross (1990); pp. 190.

approach appears to have been followed recently in Finland, for example. The Finnish competition authority found that two Finnish GSM 900 operators acted anticompetitively by falling to negotiate national roaming with newcomer Telia Finland, which operates a GSM 1800 network in a few Finnish cities.⁶⁵

Another recent example regarding the Irish wholesale access and call origination market is provided by the conclusion of ComReg according to which Vodafone and O2 occupy a position of collective SMP in the relevant product market under review. ComReg's view is that the essential conditions warranting a finding of collective dominance, as set out in the judgement of the CFI in *Airtours* and as set out in the Commission's SMP Guidelines, appear to be met in relation to the relevant market for wholesale mobile access and call origination.⁶⁶ Market entry did not occur (despite the pent up demand for wholesale mobile access) or was not effective in the past due to the behaviour of existing MNOs. This indicates a dominant oligopoly that acts as a deterrent to firms that would in principle be interested in entering the market. It is important to see that network operators could be jointly found pursuing a certain strategic choice regarding wholesale access services: such as denying access for certain type of service providers or denying national roaming for a smaller operator.

3.4.2 Would oligopolistic interdependence suffice?

An oligopoly is characterised by a positive reaction curve, i.e. if one operator changes a parameter, this will immediately induce competitors to react (so-called oligopolistic interdependence).⁶⁷ Therefore in a market with relatively few players, substantial barriers to entry and very similar market shares, joint dominance is much more likely to occur. It is important to note that under this scenario competition *may* be limited but not necessarily.⁶⁸ As Gilbert puts it '[...] a predictive model of how firms behave [in an oligopolistic situation] may be no easier to construct than a model of the weather based on the formation of water droplets'.⁶⁹ In principle, the mobile market being an oligopoly can develop in two opposite ways – towards joint dominance or to an equal control oligopoly with effective competition.⁷⁰

⁶⁵ Larouche (2000); pp. 371.

⁶⁶ ComReg market analysis (2003), pp. 58. et seq

⁶⁷ Groebel (2003); pp. 444.

⁶⁸ Mahieu (2003); presentation on Collective Dominance

⁶⁹ See Gilbert (1989), p. 478.

⁷⁰ Groebel (2003); pp. 450.

Nevertheless, a fundamental question needs clarification: what determines the dividing link between market structures that simply have few suppliers, i.e. oligopolies, and market structures with joint dominance?

Competition can be impeded in practice due to the fact that the companies have links such as agreements for cooperation, or interconnection. However, no structural links are necessary to exist, it is sufficient economic link if there is the kind of interdependence which often comes about in oligopolistic situations. As the CFI pointed out in *Gencor*:⁷¹

‘[...] the relationship of interdependence existing between the parties to a tight oligopoly within which, in a market with the appropriate characteristics, in particular in terms of market concentration, transparency and product homogeneity, those parties are in a position to anticipate one another’s behaviour and are therefore strongly encouraged to align their conduct in the market, in particular in such a way as to maximise their joint profits by restricting production with a view to increasing prices.’

Key in this definition is the interdependence between firms in a tight oligopoly, which encourages them to align their conduct in such a way as to maximise joint profits. In economic theory this is known as ‘tacit collusion’.⁷² The lesson to learn here is that the mere existence of oligopolistic interdependence (and a certain extent of output restriction) is not sufficient for a collusive outcome to obtain. Oligopolistic interdependence exists in any market with few firms, and output is often lower than it would be in perfect competition (e.g. in the Cournot model). However, this does not always mean that firms are maximising joint profits through tacit collusion.

3.4.3 Conditions for Tacit Collusion

A remarkable judgement of the CFI⁷³ in *Airtours/First Choice* identified collective dominance with the economists’ concept of tacit collusion and clarified three elements for collective dominance, or tacit collusion to be reached. It should be noted that both ComReg and Oftel

⁷¹ Case T-102/96 *Gencor v. European Commission* 25 March 1999, para. 267.

⁷² Niels (2001); pp. 168.

⁷³ Case T-342/99, 6 June 2002 *Airtours v. Commission*

has investigated the notion of joint dominance along the guidelines of this judgement, albeit with different outcomes.

First each member of the dominant oligopoly must have the ability to know how the other members are behaving in order to monitor whether or not they are adopting the common policy. In the Court's view, it is necessary, therefore, that there is sufficient market transparency for all firms in the oligopoly to be aware, sufficiently and quickly, of the way in which the other firms' market conduct is evolving. Second, any tacit co-ordination must be sustainable over time. Implicit, is the view that a retaliatory mechanism of some kind is necessary, so that any firm that deviates from the co-ordinated price (there will always be the temptation to 'cheat' by undercutting) would be met by competitive reaction by the other firms. Third, it is necessary that existing and future competitors, as well as customers, do not undermine the results expected from the common policy.

These are essential requirements to establish tacit co-ordination, but collective dominance may be determined by a wide range of factors.⁷⁴ Of course the identification of one or more characteristics of a checklist is not determinative of the existence of tacit collusion. Airtours established in clear terms that it is the interaction of the criteria set out above (and the interplay of the various elements) that determines the existence of collective dominance. Much doubt has been expressed whether NRAs would be able to carry out such a sophisticated assessment. Somewhat inevitably, an application of the concept of collective dominance in the context of regulation tends towards a mechanical checklist approach which the CFI has unequivocally rejected in favour of a more nuanced analysis.⁷⁵

To sum up, it does not follow that because a market is oligopolistic the firms will tacitly collude. Indeed, the market characteristics described above that make tacit collusion possible and sustainable are not likely to be widely met in practice. The most difficult task will be for NRAs to apply these principles in the appropriate cases.

⁷⁴ See Annex II of the Framework Directive

⁷⁵ Bavasso (2004); pp. 104.

4 Toward general competition law in mobile telephony

4.1 *Regulatory forbearance: refraining from applying regulatory conditions*

'Unlike old soldiers, regulatory agencies seem not only never to die, but never to fade away.'⁷⁶

Barry M. Mitnick

The starting point is that it is undoubtedly very difficult for any organisation, particularly a regulatory agency, seriously to question whether some of its core activities are really necessary. The fact that the NRF paves the way for gradual phasing out of sector-specific regulation, thus creates a countervailing external pressure for NRAs to exercise regulatory forbearance.

The term regulatory forbearance is often used in the sense of the *withdrawal of regulation* from some activity (wider concept of forbearance). However, following US regulatory practice, a more specific concept of regulatory forbearance has been promoted under which it can *refrain from applying certain regulatory conditions* (narrower concept of forbearance).⁷⁷

In principle, given the growing network and platform competition, higher potential for withdrawal of regulation can be detected in mobile telephony. More precisely, wholesale mobile access and call origination market serves as an interesting case study for exploring regulatory forbearance in practice.

In discussing economic regulation, the standard picture is that there are the vast majority of industries which may be subject to regulation on the grounds of health and safety, labour, technical and environmental standards, but which, in economic terms, have no ex ante regulation and are only subject to ex post competition policy. A small set of utility service industries, however, operate under ex-ante regulation. The degree too which these markets are regulated largely depend on bottleneck elements.⁷⁸ The reform potentials on the level of

⁷⁶ Mitnick (1980); pp. 416.

⁷⁷ Stern (2004); pp. 274.

⁷⁸ *ibid.* pp. 276. Stern differentiates between normal markets, markets/industries with limited competition (brewer's contracts with tied public houses), markets/industries with very limited competition (Yellow pages), industries/markets with high degree of market power (research-based pharmaceuticals), competitive segments of

network infrastructure and the remaining regulatory problems centre around the basic question whether the providers of network services need access to a network infrastructure with characteristics of a monopolistic bottleneck facility.⁷⁹ Competitive network infrastructures do not create regulatory problems. Due to network alternatives the problem of avoiding discriminatory access disappears, incentives do exist for efficient allocation of network capacities.

4.1.1 Proportionality and procedural forbearance⁸⁰

In my views, the principle of proportionality can be facilitated as a tool for procedural forbearance in accordance with imposing ex ante obligations. One of the primary objective of the NRF was to introduce flexibility in the imposition of remedies on SMP operators. If the old regime could be described from an “*all or nothing*” approach, then the greatest innovation of the NRF has been the “*one, some or all*” perspective. This change represents a new departure in comparison with the old framework under which NRAs had to impose on the SMP operators the full set of obligations provided in the directives without being able to choose the most appropriate ones.

The Access Directive provides a menu of five ascending behavioural obligations⁸¹ to rely on whilst let the proportionality principle be the ultimate guide for regulatory intervention. However, a number of practitioners were concerned about the ERG Common Position on the approach to appropriate remedies because the document dismisses the application of single remedies as inadequate. This document aims to ensure a consistent and harmonized approach to the application of remedies by NRAs in line with the Community law principle of proportionality and as such will be taken into account by NRAs as a soft-law instrument. The recommended approach in order to choose a suitable remedy is to recognize the root causes of a competition problem, gain knowledge about the global market constellation and the source of market power. The document seems to impose multiple remedies in order to deal with a

industries with monopoly (network) elements (electricity generation), bottleneck elements of competitive segments of industries with monopoly (network) elements (mobile call termination), monopoly network and related elements of infrastructure industries (wholesale broadband)

⁷⁹ Knieps (2004); pp. 22.

⁸⁰ The term ‘procedural’ has been introduced by Dr Ian Walden during an unstructured interview for the purpose of this paper held on the 7th of July, 2004 in London

⁸¹ De Streel (2003), pp. 535 et seq; transparency, non-discrimination, accounting separation, access to network facilities, price control and cost accounting

certain competition problem and thus, doubts have been raised whether cure would be worse than the disease.

To what extent the principle of proportionality will go far enough in reality to ensure efficient and not over inclusive regulation seems a challenge for regulators. In the given area of law, proportionality shall be seen as a constraint imposed on NRAs which has important implications for practitioners, since in all contexts it is possible to question the adequacy of actions undertaken by NRAs by claiming that they lack proportionality.

4.2 *All or nothing: bottleneck approach in ex-ante intervention*

The concept is based on the idea that regulation should apply as narrowly and directly as possible to certain segments of electronic communications markets and thus increasingly delegate competencies to general competition law.⁸² The question of localizing those segments is inevitably linked to defining different parts of a network.

The provision of a telecommunication service often require combining of multiple elements. A long-distance phone call may flow through the local exchange carrier's local loop, switches, and interoffice transmission facilities at the originating and terminating ends and through a long-distance company's trunk lines in between.⁸³ In this scenario the incumbent operator controls the local bottleneck and faces competition by one or several competitors, the entrants, in the long-distance market. The entrants need access to the local network in order to reach end users. From a social viewpoint, the presence of entrants in the competitive market may be desirable for several reasons. Entrants often offer a differentiated service not offered by the incumbents. They may also provide existing services at a lower cost. Last, entrants may force the incumbent to produce more efficiently.⁸⁴ Whether the analogy of the unbundled local loops of a fixed network operator can be applied to the network elements of a mobile operator to enable MVNOs to provide downstream services will be discussed later in this paper. Although the difference in the history of the fixed and mobile markets is widely recognised (an often cited argument), one can insist that mobile operators control bottleneck facilities (e.g. mobile termination), access to scarce resources (spectrum), and that companies

⁸² Imenga et al. (2001); pp. 27.

⁸³ Laffont, Tirole (2000); pp. 97.

⁸⁴ See *ibid.*, pp. 100.

requesting access to these networks invariably find themselves in an unfavourable bargaining position.

In sum, the bottleneck approach ensures that the bottleneck market is regulated so that the necessary input for adjacent markets can be obtained by all competitors.⁸⁵ However, the concept proves to be too inflexible, since it only provides the choice between regulation forever and no regulation at all. Very often regulation is not an all-or-nothing phenomenon, in fact, some commentators argue that the essential point about the NRF is not the question of whether there is more or less regulation, but what type of regulation is needed.⁸⁶

4.3 *The notion of 'Essential Facilities'*

A problem that relates to monopolistic bottlenecks is the concept of essential facilities in EC competition law. In the leading case *Stena Sealink*⁸⁷ the Commission defined the essential facilities as 'a facility or infrastructure without access to which competitors cannot provide services to their customers.' The striking point is that there is no general duty to share essential facilities, but denial of access to essential facilities must be justified by qualified criteria, or if it is not, then the refusal to supply is abusive within the meaning of Article 82 EC.

For the purpose of this paper, it should be highlighted that cases that raise issues of essential facilities *may* include mobile network operators that provide both wholesale and retail mobile access services.⁸⁸ The emphasis highlights that not only a single undertaking, but a several undertakings jointly may control essential facilities access to which is indispensable to provide downstream services. In order to play a competitive role as a service provider (or even network operator in an early stage of roll-out) in this market, a newcomer is undoubtedly dependent on the use of the spectrum already allocated to existing network operator(s) and the use of at least some network elements of the same network operator(s). However, as more networks are potential alternatives, the less likely that they could fall within the notion of

⁸⁵ Ibid supra note 83

⁸⁶ Krüger, Mauro (2003); pp. 35.

⁸⁷ *Sea Containers v. Stena Sealink*, Commission Decision EC (94/19) 'The owner of an essential facility which uses its power in one market in order to protect or strengthen its position in another related market, in particular, by refusing to grant access to a competitor, or by granting access on less favourable terms than those of its own services, and thus imposing a competitive disadvantage on its competitor, infringes Article 82 [...]'

⁸⁸ Temple Lang (1994); pp. 477.

essential facilities, unless qualified criteria are met, such as an emergence of a “new product”, as described later.

Whilst the notion of essential facilities has been developed through case law, the Commission sought to specify the scope of it in the context of the telecoms sector in the Access Notice.⁸⁹ The Access Notice specifies that an essential facility a) must be “generally essential in order for companies to compete” or “essential for reaching customers” on the related market and b) “cannot be replicated by any reasonable means” so that the “refusal of access must lead to the proposed activities being made either impossible or seriously and unavoidably uneconomic”.⁹⁰ It has introduced further conditions, namely the requirement of available capacity (the capacity of the facility must be sufficient for both the access provider and the access seeker) and the requirement of no objective justification to refuse access on the controlling operator’s side. On this point, the Commission indicates that relevant justifications may include the fact that a facility owner who has invested in the introduction of a new product may need to have sufficient opportunity to use the facility to place that product on the market (which is an undoubtedly justifiable argument in the context of the 3G landscape)⁹¹.

Having discussed the relevance of the doctrine to our topic, the question is what conditions must a network fulfill in order to qualify as a genuinely essential facility? The answer more likely to be found with a closer look into the relevant case law.

4.3.1 Access to ‘Essential facilities’ in the light of EC case law

4.3.1.1 Latest development of conditions for mandated access

IMS Health: the notion of hypothetical market

Prior to the Commission’s decision in NDC Health/IMS Health, cases in the European Union dealing with refusals to deal by dominant companies, involved situations where two distinct markets could be identified. In this case, the Commission did not attempt to maintain that there were two markets, one upstream market for the brick structures and one downstream or

⁸⁹ Notice 98/C 265/02 on the application of the competition rules to access agreements in the telecommunications sector, recital 87. et. seq.

⁹⁰ Ibid. recital 68 and 91(a)

⁹¹ See also the Opinion of Adv. Gen. Jacobs in Case C-7/97 Bronner v. Mediaprint [1998] ECR I-7791

related market for regional sales data. However, Advocate General Tizzano maintained the two-market approach, but interpreted the notion of market in a broad manner.⁹² He argues that markets for inputs can be identified without such inputs actually being marketed as such. Upstream market is considered as a potential one, in the sense that operating within it is a monopoly undertaking which decides not to market independently the inputs in question (notwithstanding that there is an actual demand for them), reserving them exclusively for its own use in a downstream market, thereby restricting or eliminating competition in that downstream market.⁹³

In its judgement the Court of Justice agreed with Advocate General Tizzano, stating that for the purposes of the application of the earlier case-law, it is sufficient that a potential market of indispensable product such as the brick structure can be identified. The notion of potential or hypothetical market⁹⁴ was not the only issue argued by Advocate General Tizzano and ruled by the ECJ in connection with access to essential facilities. The Advocate General returned to the 'new product' requirement of Magill⁹⁵, in the sense that, in order to qualify the refusal abusive within the meaning of Article 82 EC, emergence of a new product has to be prevented. The undertaking requesting access to a product protected by exclusive right (let it be copyright or ownership rights in tangible property) should not intend to limit itself essentially to duplicating the goods or services already offered on the secondary market by the owner of the exclusive right, but intends to provide services not offered by the owner of the right and for which there is a potential consumer demand. This approach has been criticised by some commentators, arguing that the consumers would certainly benefit from having a choice of different derivative products, not just the product of the access provider, even if all these products present the same features.⁹⁶

Oscar Bronner

Under the language of Oscar Bronner⁹⁷, refusal is abusive if the following conditions are met:

⁹² Case C-418/01, IMS Health GmbH & Co. OHG v. NDC Health GmbH & Co. KG, General Advocate's Opinion of 2 October, 2003

⁹³ Ibid. point 57.

⁹⁴ Case C-418/01, Judgement of the Court 29 April, 2004, point. 44.

⁹⁵ The three exceptional circumstances found by the Court in Magill were, in summary, the following: (1) there was no actual or potential substitute for a weekly guide – a product with strong potential consumer demand – and the copyright holder prevented the emergence of a new product that it did not himself offer ('new product' requirement); (2) there was no objective justification for the refusal of the copyright holder to license Magill; and (3) the TV companies were reserving to themselves the secondary market for weekly television guides.

⁹⁶ Igartua Arregui (2003); pp. 858.

⁹⁷ Case C-7/97, Oscar Bronner v. Mediaprint Zeitungs- und Zeitschriftenverlag, 1998 E.C.R. I-779.

- 1) The refusal to access the facility is likely to eliminate all competition in the relevant market;
- 2) Such refusal is not capable of being objectively justified; and
- 3) The facility itself is indispensable to carrying on business, inasmuch as there is no actual or potential substitute in existence for that facility.

Looking at the three requirements defined by the ECJ in the Bronner case, the notion of *no viable alternative* poses a further question which is whether the access seeker could reasonably duplicate the existing infrastructure and thus save the access provider from mandated access.

4.3.1.2 Is the facility indispensable to carrying on business?

The ECJ gave concrete assessment of the relevant circumstances in which resources can be deemed 'indispensable'. In setting aside the argument made by the undertaking seeking access (according to which its own situation had to be considered when assessing whether another, competing distribution channel could be established), the ECJ appraised the economic viability of duplicating a facility from the standpoint of 'another large daily newspaper'.⁹⁸ Access can be mandated, however, only if there is no possibility for the access seeker to increase its circulation to a level similar to that reached by the incumbent and to amortise the costs of the distribution network with the profits from the larger circulation.⁹⁹

What has been clarified by the Court and the Advocate General regarding the criterion of indispensability is only that it is not the turnover of the small circulation newspaper publisher requesting access which determines the essential character of the facility, but also the inability of even a hypothetical investor enjoying sufficient financial strength to recoup initial losses caused by the establishment of a second (lucrative-to-be) network. Therefore, as several authors argued, the judgement in Bronner restricts the scope of the essential facility doctrine

⁹⁸ See *ibid* point 46. 'For such access to be capable of being regarded as indispensable, it would be necessary at the very least to establish [...] that it is not economically viable to create a second home-delivery scheme for the distribution of daily newspapers with a circulation comparable to that of the daily newspapers distributed by the existing scheme.'

⁹⁹ Nihoul, Rodford (2004); pp. 482.

and does not take into account the fact that markets may be saturated, making the roll-out of a second network unavoidably uneconomic.¹⁰⁰

4.3.1.3 Elimination of all competition

Under the essential facilities doctrine, access to an infrastructure is granted because that infrastructure is essential for the development of competition on the secondary market. In comparison with the Bronner judgement according to which all competition in the downstream market would be eliminated by means of refusing access to the person requesting such access, the wording of the Access Notice however does not explicitly require all competition to be eliminated on the downstream market; it regards it to be sufficient if the owner of the infrastructure either fails to satisfy demand on an existing market, or blocks the emergence of a potential new product, or impedes competition on an existing or potential market.¹⁰¹ The Access Notice has therefore been criticised for following an over-interventionist approach.¹⁰² Nevertheless, the requirement of 'eliminating all competition' is a difficult one to meet, due to the fact that mobile access markets are usually characterised by two-to-five network operators which undoubtedly allows certain level of competition to exist by definition.

4.3.1.4 Objective justification

The crucial question not yet clarified by the ECJ, is that of to what extent the owner of an infrastructure can be required to share the available capacity between himself and his competitors. Capacity constraint as an objective justification seems relevant to discuss in connection with the mobile access market.

The first issue is how to allocate capacity among access seeking service providers, if there is not enough capacity to satisfy the needs of all of them. Under the competition rules non-discrimination principle has to be complied with. The second possible scenario is how to allocate capacity among service providers and the access controller undertaking. The crucial

¹⁰⁰ Bartosch (2002); pp. 145.

¹⁰¹ Access Notice, para. 91 lit. c.

¹⁰² Nikolinakos (1999); pp. 402-403.

question is whether the network owner should give up part of the available capacity to provide access to its competitors.

The level of competition on the adjacent market seems to be the reasonable benchmark for assessment. If the undertaking controlling the facility is only one of the players on that adjacent market and competition is developed, there is probably less reason to mandate access by restricting the capacity allocated to the network owner. By contrast, if a dominant undertaking intends to secure its market power on the secondary market, it is more likely that in order to develop competition, service provision should be favoured.

4.3.1.5 Concluding remarks: competitive concerns in Bronner and IMS Health

In sum, the doctrine has been examined in great detail, because it is especially representative of how competition law, in particular as it is applied in the electronic communications sector, is evolving whilst sector-specific regulation is gradually phased out. It is not too difficult to envisage that those market segments which do not warrant sector-specific intervention any longer, will be subject to the exclusive application of competition rules.

Based on the case law to determine whether a facility is essential the following test seems adequate to use:

- 1) lack of access to a facility must have an effect on competition on the end-user market (i.e. there is no second or third such facility to reach end-users, in other words no active substitute is available)¹⁰³;
- 2) it must not be economically viable for an objective competitor comparable in size to the holder of the alleged essential facility to duplicate the network.

Once that seems to be the proven case, the access provider would violate Article 82 EC if there was no objective justification for a refusal to provide access.

Whilst the justified ground for intervention is usually an anti-competitive behaviour of the dominant firm, be it price squeeze, refusal to deal or discrimination, in contrast, in Bronner

¹⁰³ Knieps (2004); pp. 23.

and IMS market power is an inevitable consequence of essentiality (indispensability) as the key competitive concern.¹⁰⁴ This analysis would imply that the ground for intervention would thus be more a structural market defect.

5 Bottlenecks in mobile communications?

In the NRF the finding of SMP seems to be the only decisive factor for triggering ex-ante regulation, therefore the Annex II to the Framework Directive and the SMP Guidelines contain a number of demonstrative criteria which should be taken into account when NRAs conduct market analyses. However, the bottleneck approach, as described in chapter 4.2, helps to highlight that the distinguishing criterion for identifying the remaining need for sector-specific regulation is often the question whether access to these facilities is an indispensable prerequisite for offering a complementary service on the downstream market.¹⁰⁵ This phenomenon very clearly calls for regulation on an access market, *if* input should be obtained in order to improve competitive outcome of the corresponding retail market.

To flesh out this structural approach, comparison shall be made to the recent developments of sector specific intervention in the voice call termination on individual mobile networks under the auspices of the NRF. Among many other NRAs throughout Europe, ComReg believes that an MNO enjoys a *de facto* monopoly position over termination of voice calls on its network. At present, the mechanism of supply or demand substitution is not effective in the market due to the absence of alternatives.¹⁰⁶

The network of each MNO constitutes a separate wholesale market for termination of mobile voice calls on that network and concluding that currently no viable competitive substitutes exist, it must be acknowledged that the concept of essentiality is substituted to traditional dominance analysis in bottleneck cases: the apparently the firm is in a dominant position because it controls a certain facility.¹⁰⁷ This approach in sector-specific regulation very much resembles the one discussed in connection with competition law.

¹⁰⁴ Larouche (2000); pp. 207.

¹⁰⁵ Knieps (2004); pp. 23.

¹⁰⁶ Consultation on Remedies – Wholesale voice call termination on individual mobile networks (8th June, 2004)

¹⁰⁷ See Larouche (2000); pp. 208.

It can be seen that the lack of viable alternative (e.g. no other alternative than terminating the call on the network the end-user being called has subscribed to) have an affect on the secondary market in the form of high termination charges, set above costs. Obviously the conditions for a monopoly are met in the case of mobile termination charges, regardless of the fact that mobile telephony as such (or other mobile submarket) is characterised by large number of operators with head-to-head competition for the market. It is important to see that the calling party pays externality and technical impossibilities for viable alternatives makes each network operator a monopolist on its own network. The structural problem of termination charges as a bottleneck case clearly calls for adequate price regulation. As Sverre Holt points it out an ex ante approach should be (more) confined to structural market defects, thus paving the way for effective competition.¹⁰⁸

5.1 Access and call origination markets from a comparative perspective

One needs to take into account the fact that, in the absence of some form of historical regulatory intervention, there would be few if any access markets. This constitutes a clear departure from other non-network based industries. As the following comparison will show that countries with strong service provision and well-defined access market on the wholesale level have been stimulated by regulatory intervention.

5.1.1 Identification of the market

In connection with the 'regulatory fine tuning', the Commission Recommendation differentiates between three wholesale markets in mobile telephony in which ex ante regulation may be warranted.¹⁰⁹ Access and call origination on public mobile telephone networks qualifies as market 15, however the Commission in its Explanatory Memorandum has stated that this market is unlikely to be included in future revisions of the Recommendation.

¹⁰⁸ Response to ERG/EC remedies consultation by Telenor ASA (19 January, 2004)

¹⁰⁹ Commission Recommendation C(2003)497 of February 11, 2003 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services

This statement has induced practitioners to rightly argue that the criteria for identifying this particular market as a relevant market should heavily depend on the assessment of the effectiveness of competition law alone in addressing the market failures concerned. Only markets where competition law is not considered sufficient by itself to redress market failures and to ensure effective competition over a foreseeable time horizon should be indentified for potential ex ante intervention. Based on this phenomenon, it is evident that the first chance of market 15 to escape from regulation is not to be identified as a relevant market at all, once structural market characteristics justify such a regulatory forbearance. If a sufficient number of undertakings can be detected behind existing entry barriers, but with diverging cost structures and facing price-elastic market demand, the structural characteristics themselves may push the market towards effective competition. As Oftel concluded in its market analysis, overall prices are still on a downward trend and the changes in market share suggest that consumers do respond to changes in price and other factors. It should be noted that the introduction of number portability provided end-users with an effective tool to switch operators and thus react to pricing.

5.1.2 Definition of the product market

The group of products and services under consideration in this document consists of wholesale services provided over public mobile telephone networks. Wholesale services are ones sold and purchased by communications providers rather than end users. The wholesale services is this market enable communications providers to sell to end users the ability to use mobile networks and the ability to make calls (including voice calls and SMS) from those networks. From the end users's point of view there is no demarcation between access and call origination, thus customer's integrated demand for access and outgoing calls determines that access and call origination come bundled at the wholesale level, as well.

A chief feature of all market definitions reviewed for this thesis is that precise market definition regarding 3G services is unclear at present, therefore 3G network services will not form a separate market at this stage of their development.

The geographical scope of the market is national due to an uniform pricing policy and a lack of demand and supply side substitutability from markets outside of the individual countries.

In defining the relevant product market for wholesale access and call origination services on the basis of substitutable services, the followings will have to be addressed:

- whether call origination, MVNO access and other wholesale services provided over a mobile network belong to the same relevant market; and
- whether self-supply should be included in the relevant product market, together with wholesale services provided to third parties.

Regarding the first question, it is important to note that a variety of business models exist in connection with access to mobile networks, but all depend on the very fact that only MNOs provide input for these business models. Input itself might differ, for example, indirect access operators require call origination; MVNOs require access to the radio access network; while independent service providers require access to airtime. Their smallest common denominator is the capability to satisfy retail consumer's needs, thus supporting the argument for demand-side substitutability. From the supply-side perspective any operator providing a call origination service to indirect access operators could in theory, where capacity is available, switch with relative ease to providing access to an MVNOs. Based on these assumptions, NRAs are of the preliminary view that the relevant product market, therefore, consist of *all* wholesale access and call origination services that could be offered over an MNO's network.

The second question arose in those jurisdictions where no wholesale services were currently provided, except in the form of self-supply by vertically integrated operators. On the basis of potential market transactions for the wholesale provision, it is possible to construct a hypothetical market which is consistent with the relevant Community jurisprudence as Advocate General Tizzano described this issue in its opinion in IMS. In considering whether or not self-supply of access by vertically integrated MNOs should be treated in the same way as the provision of such services to third party, ComReg's preliminary view is that this approach is the appropriate one.

5.2 *Various forms of access – fragmented mobile value chain*

There are various means to access the mobile network at the wholesale level:¹¹⁰

- 1) access for operators without their own infrastructure (third party operators, such as service provider arrangements). The service providers purchase airtime from network operators for reselling it to their contracted customers. Every call is routed in the same way as the MNO's own customer's calls, scope of differentiation from the MNO's downstream services can be obtained in customer care, invoicing and billing arrangements. Though they sell subscription/pre-paid cards in their own name and with their own prices, the substantial part of the technical service production is, however, carried out by the network operator. Two categories of service providers exist, tied service providers (TSPs) and independent service providers (ISPs). TSPs sell branded subscriptions and calls of their parent network, though the customer's contract is not with the MNO, but the TSP itself. ISPs make up the other category of airtime resellers, but they are not tied to individual network providers, therefore, can offer a choice between networks. Once again, the customer's contract is directly with the ISP itself.
- 2) MVNO means access for an operator that does not own a radio network, but has its own switches and core network. An MVNO must have its own arrangements for routing the calls to and from subscribers in other networks (mobile or fix), but does not have its own access network.¹¹¹ Services to customers are based on the management of the combination of virtual and real network elements. Tele2 as an MVNO in Norway, for example, has its own IMSI code, its own network code (MNC) and offer its own subscription (SIM card). The additional (technical) freedom that MVNOs have and the full control of the customer provide greater scope for innovation in tariff packaging, billing and introduction of new innovative services. As mobile network capacity and data applications increase with the development of the high-

¹¹⁰ Based on the explanation of *Mr. Petter Bliksrud* (Telenor AS) whom I had interviewed for the purpose of understanding technical aspects of access issues better.

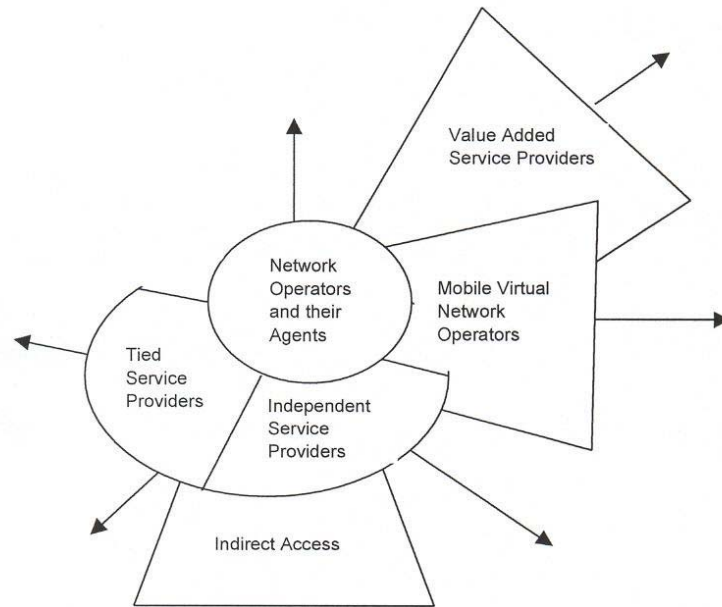
¹¹¹ ComReg's definition of an MVNO, is an organisation operating a physical network infrastructure comprising at a minimum a mobile switching centre, home location register and authentication centre, having its own unique mobile network code with distinct IMSI and E.164 number series, and issuing its own branded SIM-cards (or 3G mobile equivalents), but without a mobile radio access network. See ComReg market analysis (2004), pp. 72

speed mobile market, it is likely that this form of access will grow and evolve accordingly.

- 3) The third access is national roaming, which provides access for another network operator who has its own radio network covering part of the country. Access is then usually confined to the areas where the accessing operator does not have its own coverage. The difference between 2) and 3) is that MVNO arrangement provides access to the whole radio network, whilst national roaming is limited to a certain part of it. Teletopia, a Norwegian operator with its own (radio) network infrastructure, has built a GSM 1800 network in Oslo and is entitled to access Telenor's network via national roaming, to give better coverage for its end users.

Based on the above findings, two separate categories of external providers can be found in the wholesale market: third party operators (SPs and MVNOs) and new network operators demanding roaming facilities. A further differentiation can be made regarding point 2), if we wish to include indirect access providers into the category of virtual network provision (prefix or fixed routing). To a certain extent this service provider is operating a virtual network as well, by obtaining a carrier selection code. The call is originated on a mobile network and routed according to the agreement between indirect access provider and the mobile network operator. The indirect access provider pays the MNO for the network element used and have the freedom of choice in the packaging and tariffing of services and there is a scope for adding in new value added services.

The description above highlight the possible fragmentation of the value chain with network operators at the core, feeding into basic service providers, with indirect access providers, MVNOs and value added service providers making up the outer layers. The following diagram provides an overview of the above description:



Layers of Mobile Service Providers

The diagram includes the category of value added service providers who could offer a range of new services (new content services or m-business applications) over the various access forms. Given the bandwidth required to deliver these services, they require enhanced GSM or 3G networks.

5.3 Mandating access as a core policy dilemma

In a liberalized setting, the regulator is no longer overseeing one physical network with a single owner providing services over it. The picture is far more complex.¹¹² Ensuring access, is thus the core regulatory mandate. For the purpose of discussion, this paper is concerned exclusively with supplier access, namely the possibility for a supplier to gain access to networks in order to offer products or services. The former incumbent setting is of limited relevance in the mobile context, whereby the market has become competitive overall right from the beginning. However, problems of access are bound to remain as long as network provision as such is a fundamental input for mobile telephony, though in some jurisdictions is not marketed at all, as a distinct service.

¹¹² Larouche (2000); pp. 368.

Access to mobile networks has the potential to stimulate greater competition in the mobile market by providing consumers with more choice and possibly lower prices. In general, network operators may choose to negotiate such agreements where it is in their commercial interest to do so. However, regulatory intervention may be an alternative way of addressing the issue. MNOs would argue right away that such a mandated access may not generate appreciable consumer benefits, because a new downstream competitor would simply lead to reduction in the market share of existing firms, with few tangible benefits for end users. Furthermore, any potential gains from access may be offset by reducing the network operator's incentive to invest. Hotly debated issue, indeed, and from the point of view of MNOs it can be summarised as the closer access is to the retail level, the more limited the margin for which competition takes place and the smaller the potential gains are.¹¹³ Therefore, the MVNO concept (or enhanced service provision) is more likely to be a win-win solution for both the access-provider and the access-seeker, since the investment to be made by prospective MVNOs are substantial and not materially different from the investment made by MNOs except for the investment in base station sites and radio infrastructure. This form of access is closer to the network level, as it widens the distribution of quasi network services.¹¹⁴ It should be noted here that the divisions between the various classes of service providers are often blurred but, in general, the higher up the value chain the SP operates, the greater the potential customer benefits in terms of innovation and choice. This could gain importance if we remember that the NRF applies a strong consumer welfare approach.

Recalling the outcomes of Bronner, some practitioners argue that access obligations should only be imposed, if it can be established that refusal to supply access is reasonably likely to prevent an equally or more efficient service provider from entering the relevant downstream market.¹¹⁵ The objective of access obligations is not to stimulate wholesale competition or entry per se but to improve competition in the retail market. Therefore, any alleged exclusion of a downstream competitor must be evaluated in terms of its impact on retail competition, retail prices and consumer choice. This approach is based on the fact that demand for wholesale access and call origination principally derives from the equivalent retail service,

¹¹³ See *supra*, note 46, pp. 24.

¹¹⁴ Mobile Virtual Network Operators: Ofel inquiry into what MVNOs could offer consumers (1999)

¹¹⁵ *Ibid.*, pp. 23.

competitive conditions at the retail level are highly relevant in determining the scope for which types of access and call origination services are required at the wholesale level.¹¹⁶

5.4 *The notion of access*

A lot has been said so far about access, but what do we really mean by access? Under the old regulatory framework there was no precise definition of what was meant by access whilst interconnection agreements essentially aimed to ensure that the networks of the parties to the agreement are linked in such a way that the customers of one party can both communicate with those of the other party and obtain services provided on the other party's network by the other party or by a third party.¹¹⁷

Several changes have been introduced in the NRF with regard to access. A more general perspective has been taken in the Access Directive, where access-related obligations are extended to all facilities or resources necessary to provide electronic communications services. Contrary to the old regulatory framework, interconnection has become one among many issues relating to access.

As the scope of access has been broadened, a precise definition was given: access is the use of an operator's network infrastructure by service providers who do not have their own networks.¹¹⁸ As a result of the fact that regulation is no longer dependant on the nature of the network, access obligations can be imposed on a number of different gateways. This will cover national and international roaming to ensure, in particular, the interoperability of end-to-end services to users. The provision for mandatory national roaming between 2G and 3G networks is already mandatory in several member states. An extension of these requirements would help MVNOs who need access to the radio elements of a MNO to offer services to subscribers. The new regime, by bringing roaming explicitly within the scope of ex ante regulation, seems to be a clear departure from the ambiguity of the old framework in this regard. No wonder that the qualified nature of access under the NRF reflects concerns about its impact on competition and investment. Whilst moving towards less regulation, the scope of

¹¹⁶ ComReg's market analysis, pp. 11. and NPT's market analysis, pp. 14.

¹¹⁷ See Directive 97/33, Art. 2(1)(a) as well as Directive 90/388, Art. 1(1), as added by Directive 96/19.

¹¹⁸ Article 2(a) of the Access Directive defines access as "... the making available of facilities and/or services to another undertaking, under defined conditions, on either an exclusive or non-exclusive basis for the purpose of providing electronic communications services."

intervention broadened out which seems to be inherently paradoxical. However, based on the very first market analyses carried out under the auspices of the NRF, the question of “regulate-or-not-to-regulate” is undoubtedly linked to the need (or absence of the need) of imposing access obligations in order to optimise the retail market outcome. If NRAs concluded that the market is effectively competitive, they did so, because of not being enthusiastic to mandate any particular access. Thereby, ‘what access is required to optimise market outcome’¹¹⁹ seem to be the issue to be dealt with by NRAs, for example, by ComReg when concluding that the relevant access and call origination market is not effectively competitive, thus considering imposing national roaming obligations or mandating access for service providers and/or MVNOs. At the opposite end of the scale a less interventionist approach was taken by Oftel/Ofcom when deciding not to mandate MVNO access in light of increasing competition in the mobile market (no supplier has SMP, either individually or jointly). All in all, NRAs seem to have a tendency to equate the number of players with the level of competition and propose access obligations to bring the relevant market to an effectively competitive level.¹²⁰

5.5 *Perspectives on MVNOs’ regulatory environment*

As it has been stated above the NRF may materially affect the nature of regulation to which MVNOs are subject. The Eight Report from the Commission on the Implementation of the Telecommunications Regulatory Package indicates that “one aspect of access to electronic communications networks that is not mandated by the 1997’s regulatory framework, but that may be by individual NRA’s under the new one, and which is likely to play a growing role in the future, is the provision of access MVNOs”.¹²¹ Whereas in the bulk number of member states the MVNO model remains subject to sole commercial negotiations, there are some member states which have incorporated provisions into their national electronic communications law to govern such access (for example, in Finland the statutory provisions of the new Communications Market Act includes a provision allowing for such access).

Several reasons have been advanced for opening MNOs’ networks to MVNOs. The biggest argument is that it would open mobile markets to new entrants and thus foster competition

¹¹⁹ Quoted from Ms. Katinka Mahieu

¹²⁰ Quoted from Ms. Katinka Mahieu

¹²¹ See pp. 24.

and benefit consumers. MNOs who have recently had to pay large sums to secure licences and face significant further expenditure to develop their 3G networks, are concerned that MVNOs will end up benefiting at their expense. This concern is reflected in Italy's decision not to allow MVNOs access to 3G networks for at least 10 years to ensure that licence holders are able to recoup at least some of their licence and network investments. MVNO supporters counter that opening up markets to MVNOs benefits MNOs as it allows them to recoup network development costs and affords MNOs in one country the opportunity to expand their own geographic coverage to markets where they have not secured a licence. This enables radio frequencies to be more broadly shared. As shown by the MVNO arrangement of Tele2 and Telenor, the mutual agreement gives both companies MVNO access to each other's GSM and future UMTS networks in Norway and Sweden.¹²² It should be noted that this agreement has been concluded purely on a commercial basis. The approach taken by the Swedish and the Norwegian regulator towards MVNOs is quite different: mobile operators were not required to give access to MVNOs in Norway, but Sweden introduced legislation requiring GSM operators to lease excess capacity to MVNOs.

Regarding the former regulatory environment, it was not entirely clear that the services offered by MVNOs were covered by the Interconnection Directive. However, the ONP Committee concluded that Community law does not mandate access for MVNOs, and therefore it is a matter for commercial agreement between the parties.¹²³ The interface between the two access regimes is well illustrated in ART's (Autorité de Régulation des Télécommunications) decision which ruled that new entrant, Tele2 France had no right to require existing mobile operator, Orange France, to enter into an MVNO agreement. According to ART, MVNO services are essentially roaming services and therefore do not fall under the interconnection regime (i.e. Article 2.1 of EC Directive 97/33). However, ART noted that MVNO services should fall within the definition of access in Article 2 of the Access Directive of the NRF. The Access Directive clearly contemplates the sort of access required by MVNOs. In the definition of access, the Directive specifically refers to access to

¹²² Telenor press release available at http://press.telenor.com/PR/200209/873685_5.html

¹²³ ONP Committee, 'Access to fixed and mobile network infrastructures owner by operators designated as having significant market power', Brussels, June 20, 1999

virtual network services and in Article 4, 5 and 12, it sets out the obligations that may be imposed on operators to offer access to other undertakings.¹²⁴

However, the Access Directive does not create a blanket right of access. In framing an access regime, NRAs “need to balance the right of an infrastructure owner to exploit the infrastructure for its own benefit, and the rights of other service providers to access facilities that are essential for the provision of competing services.”¹²⁵ Further, in imposing ex ante obligations, the NRAs shall take into account the investment made by the SMP operator, and economic viability of using or installing competing facilities.¹²⁶

5.6 *Terms and Conditions of Access*

If access is to be mandated on mobile networks, the basis on which access will be charged must be considered. The charging basis for access to networks is a key determinant in the level of tariffs which the service provider can offer and consequently for increased price competition in the mobile market. There are a number of options as to the basis on which such access may be charged. These options may depend on the nature of the access in question e.g. airtime resale, indirect access or MVNO. The options include: retail minus prices, cost plus return on capital (similar to interconnection pricing), or commercial negotiation.

The advantages of using retail minus include speed of implementation as it does not rely on the detailed capturing and measurement of costing information. A retail-minus price is aimed at ensuring that there is just sufficient margin for service providers to operate and does not disrupt the existing structure of retail prices. Cost oriented prices focus on the wholesale costs and can set a wholesale price where the SMP MNO is allowed to make a normal profit in that market.

Clearly, there are potential difficulties if, over any extended period, the return to network operators is insufficient to fund future investment. Investors in the mobile market, like investors everywhere, seek out opportunities providing the potential for the most rapid and largest returns. The effects of such strong investor interest is clear when we consider the very

¹²⁴ Under the Access Directive (Article 12 (1)) NRAs may impose access obligations on a SMP operator where it considers “...that denial of access or unreasonable terms and conditions having a similar effect would hinder the emergence of a sustainable competitive market at the retail level, or would not be in the end-users’ interest.”

¹²⁵ Ibid. Recital 19

¹²⁶ Ibid. Article 12 (2)

rapid deployment of complex and expensive mobile networks throughout Europe. The introduction of any or all of the various forms of access with any of the various pricing options described above, will have an effect on investment in networks. As ComReg elaborates on the issue of retail minus vs. cost orientation in its market analysis, the threat of cost-oriented methodology for setting national roaming prices can result in not encouraging the non-SMP (access-seeker) operator to build out its network.¹²⁷ This is precisely why the “ladder” theory of investment which the ERG Common Position relies on has been so widely criticised by the MNOs.¹²⁸ It has been argued that unless wholesale prices are, or are phased over time to become, sufficiently high, an alternative operator will always choose cheap access rather than build infrastructure. Once access is granted, especially if access charges are inefficiently low, regulators may find it difficult to remove such concessions, owing to the adverse impact on entrants whose business cases may depend on inefficiently low access prices.

5.7 *Is access to mobile networks for MVNOs a monopolistic bottleneck?*

As it has been described the monopolistic bottleneck approach wishes to define today’s bottlenecks that require regulation. It suggest to limit regulation to situations where a natural monopoly setting coincides with irreversible costs for potential entrants. Mobile networks cannot be considered such bottlenecks due to the very fact that several mobile network operators owning the corresponding number of mobile networks compete on the market.¹²⁹ Recalling the competitive concerns of bottleneck cases (i.e. there is no second or third such facility to reach end-users, in other words no active substitute is available), this approach disregards the possible scenario that based on the anti-competitive behaviour of the dominant operator(s), market entry might still be extremely difficult for a newcomer requesting any type of access, provided that this entry has a potential welfare effect on the downstream market. Therefore, the flexibility of the NRF proves to be effective in reconciling the “what-to-regulate-and-what-not approach” with the threshold of dominance and the requirement of proportionality in connection with imposing appropriate remedies. It is clearly not adequate to phase out regulation in mobile communications based on the monopolistic bottleneck

¹²⁷ See ComReg market analysis, pp. 84

¹²⁸ ERG (2004); pp. 13 *et seq.*

¹²⁹ See Knieps (1999); pp. 9

approach, because accordingly regulation could not be justified where a market has sufficient competitive potential.

However, its purely structural approach towards the localization of regulation could be used to capture the reality of the current market analyses: the notion of indispensability clearly ventures into the concept of dominance meaning that the facility itself makes the undertaking dominant. To flesh out this finding, the market analysis carried out by Post- og Teletilsynet (Norwegian Post and Telecommunications Authority) should be summarized here.

6 A brief sketch from a comparative perspective

6.1 Norwegian mobile market: structural barriers to entry

It is not the aim of this paper to provide a comprehensive guidance on the relevant legal framework on national level, as the underlying regulatory regime finds its common roots in the secondary legislation of the European Union. However, regarding Norway it should be noted that although the EU directives and soft law instruments will not apply formally to Norway, NPT has chosen to proceed in accordance with these regulations in the work on market analysis since the EFTA's corresponding regulation have not yet been promulgated at the time of conducting the analysis.

Based on the number of criteria envisaged in the Commission Guidelines on market analysis and the assessment of significant market power, NPT has issued its methodology to define relevant markets and evaluate their competitive state. The analysis of the market for access and call origination has been carried out accordingly, roughly divided into three groups of criteria: 1) market share, profitability and structural indicators, 2) entry barriers, 3) other criteria. All the criteria will not be discussed in detail here, I would rather focus on the actual outcome of the analysis and structural merits to support my argument.

The relevant market on the supply-side is made up of the network operators Telenor Mobil and NetCom and on the demand side by service providers (such as Chess, You, Tele2 and others). The analysis does not make a clear difference between MVNOs and service providers, all are included into the category of third party operators. The demand side also contains other

network operators, such as Teletopia and Hi3G, respective owners of a DCS-1800 licence and a UMTS licence in Norway. Both supply-side operators in the relevant market are currently obliged to allow access to their GSM networks, due to this obligation a range of service providers established themselves in the market.¹³⁰ Though the relevant market is the wholesale market, yet a relatively large section of the document is devoted to the situation in the end user market, since the latter reflects upstream competition to a significant degree.

NPT is confined to the view that the control of infrastructure can be an indicator of market power for the established operators, and the need for such infrastructure can act as an entry barrier for potential newcomers. If an operator controls infrastructure that is difficult to duplicate, and this infrastructure represents an important input factor in the relevant market, this could represent a substantial entry barrier for potential competitors. As long as there are available frequencies for mobile communication, it is technically possible to duplicate the existing networks. The question is, however, whether it would be difficult to duplicate networks due to financial and market-related conditions.¹³¹ NPT is of the view that the topography of Norway makes an infrastructure roll-out a lot more expensive than in other countries. Thus it would be extremely expensive to duplicate Telenor Mobil's or NetCom's entire network, and achieve comparable coverage. A widely-spread and small population, resulting in a relatively small traffic base, can make the individual costs extremely high in the case of a network with near-nationwide coverage (especially difficult to exploit economies of scale with more nationwide mobile networks). Therefore, NPT concludes that yet access to the existing infrastructure, at least in a transitional period, could reduce the impact of this entry barrier.

As it has been described Telenor's strong position in the Norwegian market in terms of input factors and the corresponding absence of potential upstream competition seems to play a more decisive role than the finding of high level of price competition in the market (price reduction in the end user market). Since new operators are dependent on access to the existing mobile infrastructure, at least in a transition period, NPT anticipates that potential competition does not weaken the market power of the two existing mobile network operators in the relevant market to a significant degree. However, NetCom's market share (30%) does not reach the threshold of dominance (as NPT considers holding in excess of a 50% market share is a

¹³⁰ See NPT market analysis pp. 26

¹³¹ Ibid. pp. 35

rebuttable presumption of single dominance¹³²), but Telenor Mobil's market share in the end user market is just under 60%, whilst its market share as a network provider is around 70%, depending on the method of calculation which makes Telenor Mobil to become the SMP operator in the market for access and call origination. In any finding of single dominance, it is true that the larger the market share enjoyed by an individual undertaking, the greater the likelihood of a finding of SMP.

Despite its relative importance, market share cannot be relied upon, to the exclusion of other factors, as being indicative of dominance. All in all, NPT's conclusion is rather focused on structural characteristics of the Norwegian market derived from the difficulty to duplicate a mobile network with such coverage. As point 308 clearly states "the fact that Telenor Mobil has a mobile network with such coverage indicates that Telenor Mobil has significant market power." No other market analysis has discussed the notion of entry barriers and high sunk costs that extensively due to which competition is limited. Having considered the significance of high barriers to entry, the potential for vastly reducing this barrier by the fact that barriers to expansion might appear to be low, has not been discussed. Despite the fact that Telenor Mobil has experienced a relatively significant decline in market share in the end user market in the period from 2000 to the second quarter of 2003, NPT found that the structural aspects of the market resulted in Telenor being a single dominant position. The document clearly calls for access regulation in order to weaken the market power of the SMP operator.

6.2 *Ireland: behavioural evidence*

Ireland's Commission for Communications Regulation (ComReg) has published the findings of its review of the mobile market. In the course of its review, ComReg found that the access and call origination market has one of the highest concentrations in the EU, with the two leading operators (Vodafone and O2) having 95% of customers between them, with Meteor a distant third.

ComReg is now proposing that both Vodafone and O2 will be designated as having SMP (joint or collective dominance) and will be obliged to allow other operators access to their networks. ComReg's consultation finds that the prices of the two main operators have not

¹³² See *AKZO v. Commission*, Case C-62/86, [1991] ECR I-3359

changed significantly following the arrival of Meteor, with the two main operators having significantly higher ARPUs. These provide a strong indications of a lack of effective competition at the retail level. ComReg believes that the best way to ensure that customers can get greater choice and value for money is through enhanced competition and ComReg therefore proposes to introduce national roaming in order to strengthen the competitive offering of the other mobile network operators, by enabling them to give greater phone coverage to their customers throughout the country. ComReg is also consulting on whether Vodafone and O2 should also be obliged to provide access to service providers and MVNOs. This could allow service based telecoms companies to compete in the mobile market without having to build a full mobile network.

However, the approach seem to differ from NPT's devotion to structural barriers. ComReg is rather focussed on indicators suggesting that both Vodafone and O2 are able to insulate themselves from effective competitive pressure at the retail level. This ability is reinforced by the fact that both undertakings display a whole range of symmetrical characteristics that are conducive to the adoption of parallel behaviour.

6.2.1 Competition concern: wholesale market behaviour

At the wholesale level, there currently is a lack of access and call origination products in the market. ComReg is of the preliminary view that the absence of transactions at the wholesale level, is arguably itself a legitimate cause for concern as regards collective dominance. The failure of the MNOs to conclude access agreement is highly relevant in terms of its impact of on ComReg's analysis of whether any of the MNOs are collectively dominant in the national wholesale market for access and call origination. Evidence over the last few years has shown that there is demand for wholesale access to mobile services, ranging from airtime resale, to MVNO access, to national roaming agreements, and that this demand has not been met.

Currently, both '3' and Meteor are seeking to enter into national roaming agreements for 2G services with Vodafone and O2. Vodafone and O2 have an obligation to negotiate a national roaming agreement with '3' under the terms of their respective 3G licences, but it does not appear to ComReg that Meteor's bargaining power *vis a vis* Vodafone and O2 is sufficient for it to obtain a commercially negotiated national roaming agreement with either MNO.

ComReg has reached the preliminary conclusion that Meteor does not constitute a significant competitive threat to the market position of O2 and Vodafone due to the lack of full geographic coverage and the absence of a national roaming agreement.

ComReg concluded that neither the wholesale level, nor the retail market is effectively competitive. It should be noted that competitive concerns arose primarily from the behaviour of the market players on both market segments (behavioural nature of competition problems). Aligned or consciously parallel behaviour hinders competition on the retail level and the lack of wholesale transactions despite pent-up demand for upstream services limits competition at both the wholesale and retail level. Following the approach of the ERG Common Position according to which when imposing ex ante remedies NRAs cannot actually observe a certain type of anti-competitive behaviour but will have to anticipate the appearance of a particular competition problem based on the incentives of an SMP operator to engage in such a behaviour, ComReg further elaborates on pricing and non-price issues as further possible sources of competition concerns.

Therefore, the regulator believes that intervention through the imposition of appropriate remedies may be required at this time in order to restore proper incentives for MNOs to compete against each other.

6.3 The United Kingdom: withdrawal of regulation

According to David Edmonds, the former Director General of Telecommunications “It is a major landmark that sectoral regulation is no longer needed in this market to support competition. Oftel will now use general competition law powers to tackle any anti-competitive behaviour.”

This particular market analysis was the first of Oftel’s market reviews to finish, and represents a milestone by being the first one to be concluded by any EU telecoms regulator under the new EU legislation. Though the document itself does not address the issue of regulatory forbearance, clearly it was the last step in the withdrawal of regulation by Oftel over recent years, as competition has increased.

The conclusion notified by Oftel to the Commission was that competition on the market was effective and that no network operator had individual or joint SMP. This means that no one supplier has a significant market share over its competitors, or any significant cost, technological or other competitive advantage, and that there is no collective dominance. The latter was assessed on the basis of significant historical fluctuations in relative market shares, significant asymmetries of the relative profitability, continuing entry onto the retail market by service providers, fluctuating relative prices and retailers' countervailing buyer power. It should be noted that the Commission was happy with Oftel's market share analysis which was based on the state of the retail market, since the structure of supply at the wholesale level is derived from supply at the retail level.

Historically, the UK mobile communications market was in favour of service provision. Between 1985 and 1993, there were only two operators, Cellnet and Vodafone. In attempt to stimulate competition, Cellnet and Vodafone were initially required to market their services only through independent service providers, rather than dealing directly with subscribers.¹³³ Since April 2002 there have been no regulatory obligations supporting the entry of service providers, but Vodafone and O2 had been obliged to provide indirect access on retail-minus basis. Before that, however, since 1998 there were obligations on Vodafone and BT Cellnet (later O2) of non-discrimination and the resale of wholesale airtime, which supported the entry of a large number of companies. The overall number of ISPs in the market has remained fairly constant since April 2002, at around 50 service providers. The service providers' share of the market has continued to grow since the removal of the regulatory obligation to supply and this evidence suggests that regulatory withdrawal has had no negative impact on the ability of service providers to deliver services. This clearly shows that there is space for new providers and new products within the market. Those service providers that can deliver added value for consumers are more likely to do a good deal with a mobile operator for supply of wholesale services.¹³⁴

However, there have also been a number of entrants into the market who have not based their entry on regulatory support at all. Virgin Mobile is the most prominent example, but all the other major brands that have entered have done so bases only on commercial negotiation with networks. Based on this approach, Oftel concluded that whilst barriers to entry are a key part

¹³³ Valletti; Cave (1998): pp. 110

¹³⁴ Oftel market analysis (2003); pp. 23

of the competitive context, many other factors can determine the overall state of competition in the market. In fact, the overall level of competition is what really mattered, when deciding that no mobile network operator was dominant in the relevant market.

Even the most profitable network operator's market share does not reach the 40 per cent threshold normally considered to give rise to dominance concerns; the existence of collective dominance seemed the only potential way to trigger sector-specific regulation. Though a number of features of this market could be pointed to as evidence for the existence of collective dominance, a number of other factors do not support such a finding. One striking feature is the growth of strong retail competitors with negotiating power which seem to promote further network competition. As it has been discussed earlier, mobile network operators have different strategies toward service providers. T-Mobile has formed agreements despite not having any regulatory obligations to do so. Since their regulatory obligations ended, Vodafone and O2 have both made agreements with other providers, serving varying market segments, but Orange's strategy has not involved service providers in this way. Such variations between mobile network operators do not indicate the existence of a co-ordinated approach in this market.

Clearly, this market analysis provides the industry with the first real glimpse of "light touch" approach. As Nic Green from Oftel explained it to me in our e-mail correspondence: "[t]he view of removing regulation and not promoting MVNO access was based on our judgement of the level competition. That is often a difficult judgement but does need to be clearly justified in legal terms. We did not specifically consider exercising regulatory forbearance in this market, what we did simply followed at each stage what we thought we needed to do to ensure competition."

Whilst some EU countries have taken specific steps to encourage the development of MVNOs and the more enhanced SPs, in the UK Oftel has not differentiated within the independent SP sector and currently relies on the development of different ISP models through commercial negotiations with the MNOs. According to BT's response to Oftel' consultation document, Oftel (OFCOM) does need to monitor in the future the extent to which the more 'value-added' end of the independent service provider spectrum is being allowed to develop where SPs or

MVNOs are most likely to be able to increase consumer choice in terms of price and service packages.¹³⁵

6.4 *Hungarian mobile market: absence of wholesale transactions*

Market number 15 has been defined as a relevant market according to the Recommendation. NHH (National Communications Authority) is of the preliminary view that it includes wholesale access and call origination services for MVNOs, for indirect access and access for value-added service providers. Interestingly enough, the list of upstream services does not include service providers as such.

But the novelty of NHH's approach certainly lies in the conclusion regarding the designation of SMP undertakings on the relevant market. NHH stated that the above-mentioned wholesale services have not been provided on the territory of Hungary (lack of transactions), but the corresponding retail market is effectively competitive. According to NHH, the total absence of wholesale transactions does not allow market analysis to be carried out regarding the wholesale segment of the market. The competitive retail market as such gave enough indications for NHH to conclude that the wholesale market is effectively competitive and no SMP operators should be designated. Though Article 12 of the Access Directive explicitly mentions the competitive development of the retail market as justification to impose (or not to impose) obligations on MNOs with SMP, the crucial issue at hand is more the alleged impossibility of economic analysis regarding the wholesale segment.

Bronner and IMS should be remembered here, discussion of which has shown that the fact that no transactions are taking place does not prevent a competitive analysis. The notion of hypothetical market (access to the infrastructure constitutes a market in itself regardless of the fact that upstream services have not been marketed) has been addressed not just by the case-law of the above chapter, but also by ComReg in its market analysis.¹³⁶ It is rather controversial that despite the existing competition case-law NHH concluded that the lack of transactions prevent market analysis to be carried out. Recalling the similarities of the Irish and Hungarian market, in both countries no MNOs offer wholesale access and call origination

¹³⁵ BT (2003); pp. 5

¹³⁶ See ComReg market analysis, pp. 22

services to other service providers, though in Ireland this is so despite of the existing pent-up demand. However, the Irish regulator came to a different conclusion according to which the absence of transactions at the wholesale level is arguably itself a legitimate cause for concern as regards collective dominance.

Logically, if no SMP operators are designated, just because a wholesale market, in which no transactions take place, allegedly cannot be analysed based on objective criteria, the contrary could also be concluded based on the very same logic; it cannot be unambiguously stated that individually or jointly dominant operators do not exist in the market. NHH concluded that there has been price reduction in the end user market which together with volatility in market shares indicates that MNOs are competing vigorously. However, retail price level based on an international price comparison still indicates that an average Hungarian end-user with medium usage still pays more than an Irish, Norwegian or English customer.¹³⁷

NRAs are specifically obliged to investigate whether single or joint dominance exists in the wholesale market. In order to undertake this analysis, it is necessary to examine certain criteria that relate to the retail level. This is because competitive conditions at the retail level are relevant to the existence of market power at the wholesale level. For example, it does not follow from the fact that operators are vertically integrated and may not supply wholesale services to third parties that they have market power at the wholesale level. Any such power could be constrained by competition between vertically integrated operators at the retail level. Moreover, if vertical integration is efficient, the adoption by a number of firms of a vertically integrated structure could not then be construed as evidence of co-ordinated conduct. The question seems to be whether the effectiveness of the wholesale market could be a regulatory goal as such, or it should only be considered as a regulatory tool to contribute to the competitive outcome of the retail market?

The answer seems to touch on value judgement of NRAs. As it has been mentioned in chapter 2.2, the NRF aims to identify and create values which value creation introduces constraints on the type of actions that NRAs may undertake. Decision making often involves careful consideration of contradictory objectives, thereby NRAs will have to pick and choose among them in order to achieve a priority goal, let it be infrastructure roll-out or service-based

¹³⁷ See figure 7 on pp. 59 of NPT's market analysis

competition. Taking into account the fact that MNOs have just been invited by NHH to tender for UMTS licences and NHH's goal seem to be to induce one more network operator to enter the market as the fourth network operator, this value judgement obviously calls for the kind of consumer welfare standard to be applied in the pending market analysis which will not threaten investors with potential intervention.

6 Conclusions – a role for regulation?

In summary, unlike fixed telephony, mobile markets have been characterised by intense and increasing competition. This is evidenced by, amongst other things, high penetration level, falling prices, the availability of wide ranges of tariffs and packages, high levels of switching and rapid innovation. Accordingly, MNOs are of the view that mobile operators should be treated just as any other undertakings of unregulated markets where, if market failures occur, they are addressed using ordinary competition law mechanisms.

There is considerable scope for argument, as to what extent wholesale mobile access and call origination market should be regulated, due to expectations of the impact of NRF and its mixture of concepts borrowed from competition law, which is meant to reduce the gap between a system of regulation and a deregulated environment. In particular, the effects of the new test are hard to predict in markets where there are a limited number of players and significant barriers to entry. The uncertainties as to the test for joint dominance give rise to doubts as to whether, in some apparently oligopolistic situations (such as the one at stake), regulation of *all* players, or *none* of the players will be the outcome of market analysis. Very often the marketplace itself demands that MNOs compete rigorously *for* the retail market, even as it demands that they collaborate to reap the benefits of shared costs and expertise. As all the capital-intensive industries are, by definition, resource hungry, so is mobile telephony, but that investment is made with the expectation that it will sustain the industry over the long term. Whether regulation imposes needless burdens and consequently regulatory forbearance should be exercised, or on the contrary, intervention contributes to competitive outcome, it has been evaluated by European regulators. They all are given the very same regulatory tools to tackle the issue, but their value judgements might considerably differ.

It was the aim of this paper to discuss whether access to the radio network provision level is considered as a bottleneck element and it has been argued that where second or third facility exists to reach end-users, it is very doubtful that the facility would qualify for an essential facility and thus call for mandatory access. But based on the dominance test the threshold for single or joint dominance triggers ex-ante intervention and paves the way for a potential access regime. As it has been described the assessment of SMP could be approached from a rather structural perspective (like Norway) or from a behaviour-focussed angle (like Ireland). In these jurisdictions, the question is not whether there is more or less regulation, but what type of regulation is needed, more precisely what sort of access might be necessary to optimise market outcome.

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